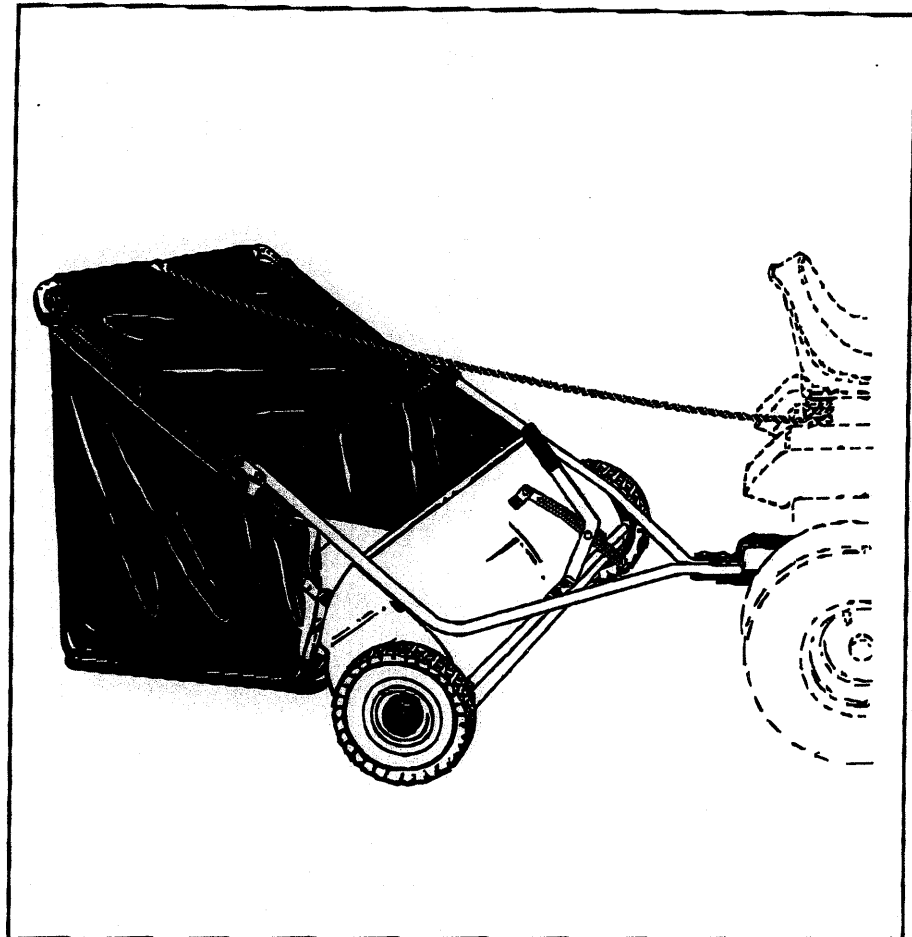


OWNERS MANUAL

**Model No.
190-459A-100**



46" Heavy Duty LAWNSWEEPER

CAUTION:
Read Rules for
Safe Operation
and Instructions
Carefully

- Safety
- Assembly
- Operation
- Maintenance
- Parts

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SAFETY



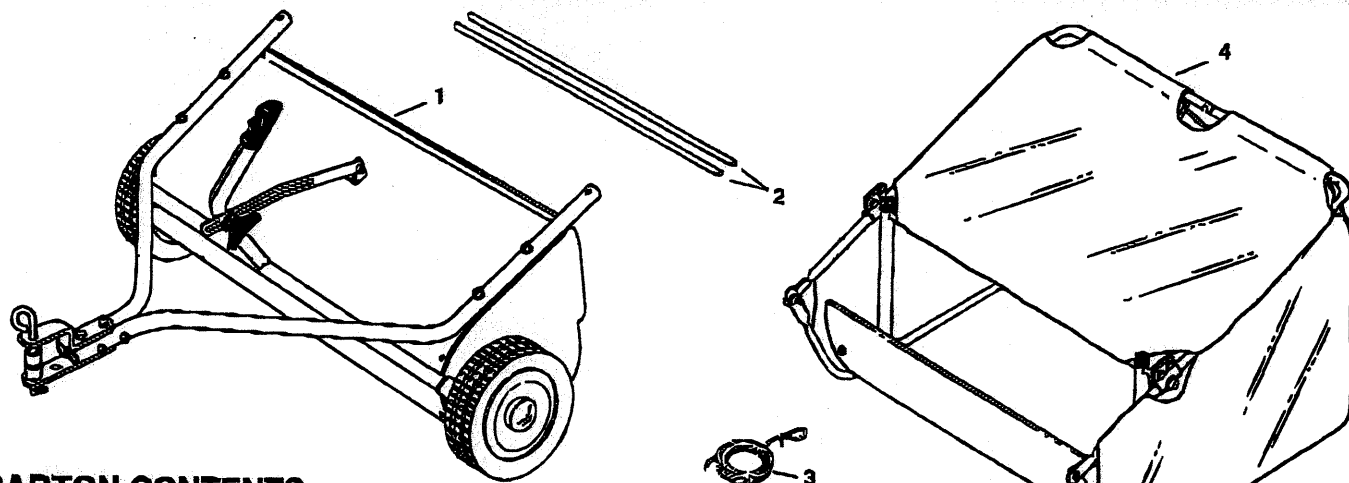
Any power equipment can cause injury if operated improperly or if the user does not understand how to operate the equipment. Exercise caution at all times, when using power equipment.

1. Read the vehicle and sweeper owners manuals and know how to operate your vehicle and sweeper before using this sweeper attachment. Always instruct other users before they operate the sweeper.
2. Do not permit children to operate sweeper.
3. Do not permit anyone to ride on sweeper.
4. Never attach the hopper rope to any part of your body or clothing! Never hold onto the rope while towing the sweeper! Attach the rope to the towing vehicle to keep it away from wheels and rotating parts.
5. Operate the sweeper at reduced speed on rough terrain, near ditches and on hillsides to prevent loss of control.
6. Vehicle braking and stability may be affected with the attachment of this sweeper. Do not fill sweeper to maximum capacity without checking the capability of the towing vehicle to safely pull and stop with the sweeper attached. **Stay off of steep slopes.**
7. Stop and inspect vehicle and sweeper for damage after striking an object. Repair any damage before continuing operation.
8. Keep sweeper away from fire. Excessive heat can damage the brushes and hopper bag and could cause the bag and its contents to burn.
9. Before storing the sweeper, always empty the hopper bag to avoid spontaneous combustion.
10. Follow maintenance and lubrication instructions as outlined in the maintenance section of this manual.



Look for this symbol to point out important safety precautions. It means--**Attention!!**
Become alert!! Your safety is involved.

ASSEMBLY



CARTON CONTENTS

1. Sweeper Assembly
2. Brace Rods (2)
3. Rope
4. Hopper Assembly

HARDWARE FOR ASSEMBLY

Hardware is preassembled to sweeper and hopper.

1. Remove the nuts, lock washers and bowed washers from the two curved head bolts, leaving the bolts in the tube at the front of the sweeper housing. See figure 1.
2. Loosen the knob fastening the height adjustment handle to the height adjustment strap. See figure 1.
3. Place the base of the height adjustment handle onto the two curved head bolts and secure it with the bowed washers, lock washers and hex nuts that you removed. See figure 1.

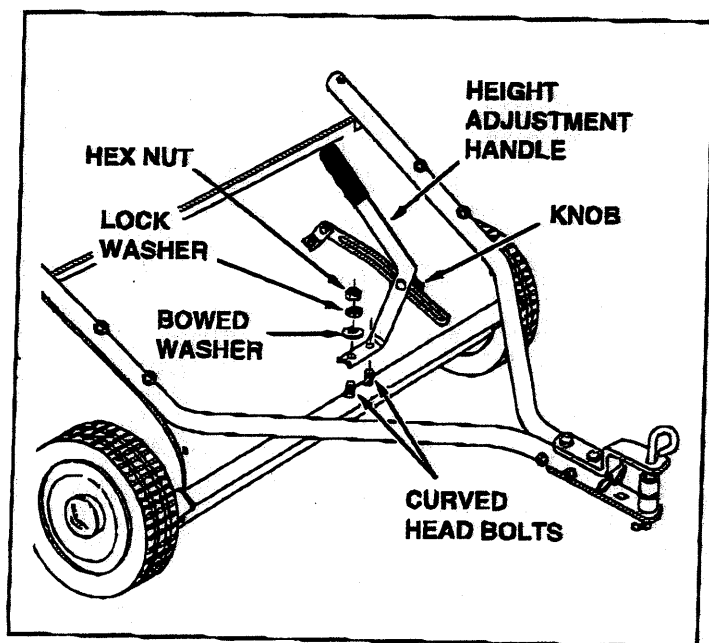


FIGURE 1

TOOLS REQUIRED

- (1) 1/2" Wrench

4. Attach the ends of the lower hopper tubes to the inside of the side hopper tubes using the two 3/8" x 1/2" clevis pins and 3/32" hair cotter pins which came preassembled to the tubes. See figure 2.

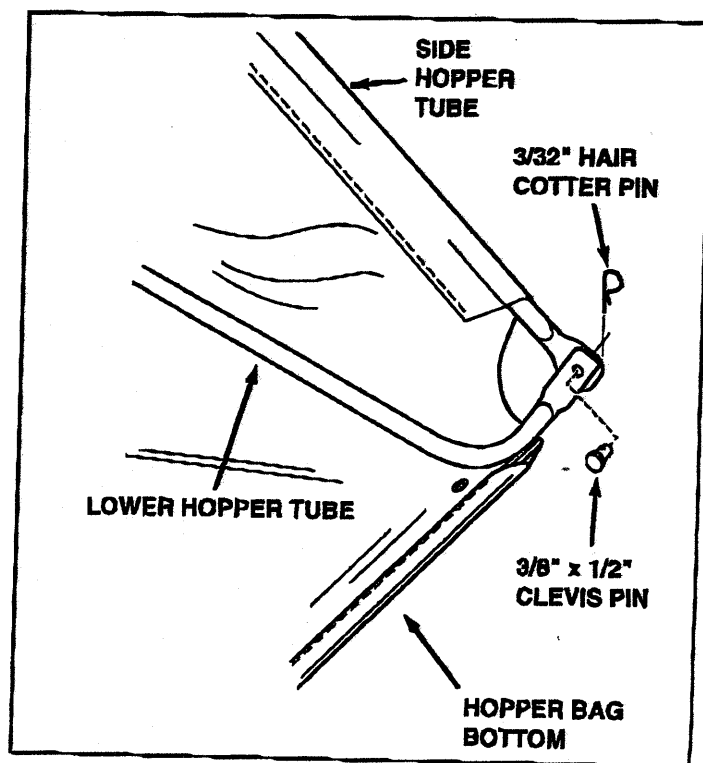


FIGURE 2

IMPORTANT: Do not over bend the support rods during the following step. Over bending will cause the spring steel rods to loose supporting tension.

5. Assemble the two hopper support rods as shown in figure 3. Place one end of a rod into the hole in an upper hopper tube and bend the rod just enough to fit the bottom end of the rod into the hole in a bottom hopper tube.

HINT: To ease assembly of the rods, tip the hopper bag back so that the rear of the bag rests on the ground.

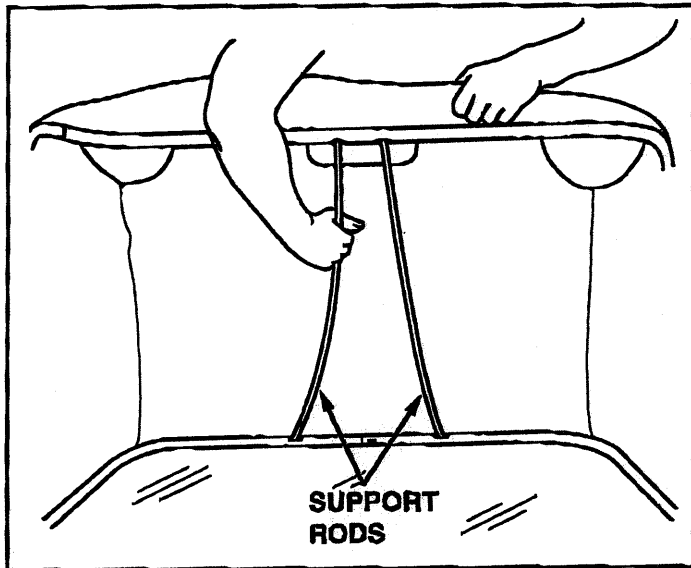


FIGURE 3

6. Secure the rope around the middle of the upper hopper tube as shown in figure 4.

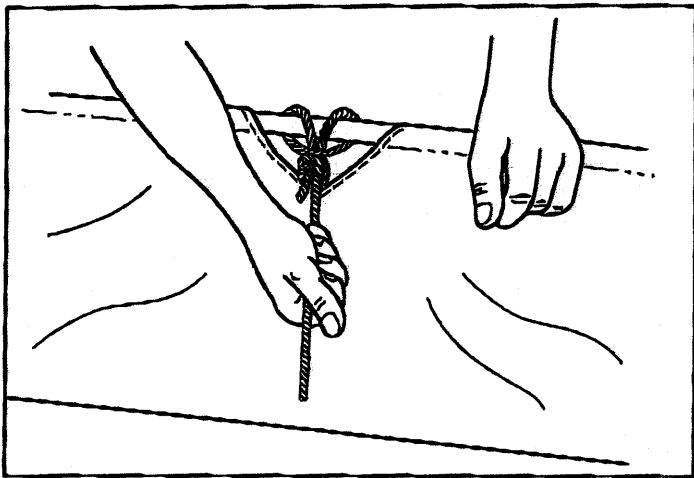


FIGURE 4

7. Assemble the hopper bag to the sweeper by sliding the ends of the bag arm tubes into the ends of the hitch tubes. Secure with two $1/4" \times 1-1/2"$ clevis pins and $3/32"$ hairpin cotters that came preassembled to the hitch tubes. See figure 5.

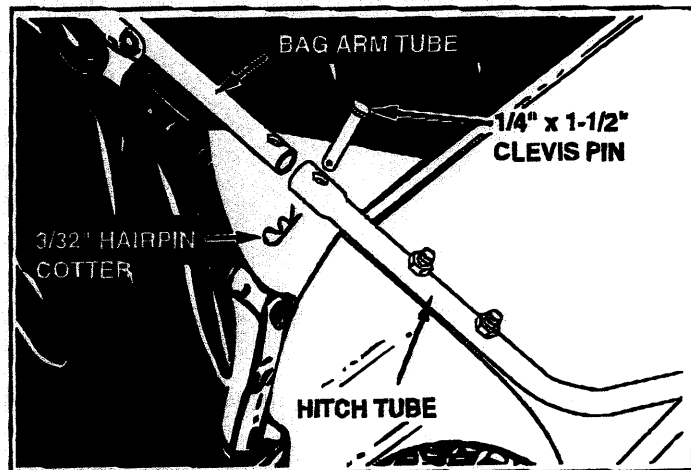


FIGURE 5

ATTACHING SWEEPER HITCH TO TRACTOR

1. Place the tractor and sweeper on a flat level surface.
2. Measure the height of the tractor hitch. Refer to GROUP "A" and GROUP "B" drawings below to determine if the sweeper hitch brackets are mounted correctly for your tractor or if the top and bottom brackets need to be switched.
3. Set the sweeper height adjustment handle to about the middle of its adjustment range.
4. Attach the sweeper hitch to the tractor hitch, arranging the 3/4" spacers into one of the six possible combinations shown in GROUP A and GROUP B diagrams below.

IMPORTANT: To obtain the best performance from your sweeper, arrange the spacers so that the sweeper bag is approximately level with the ground and approximately 5" to 7" off the ground as shown in figure 6.

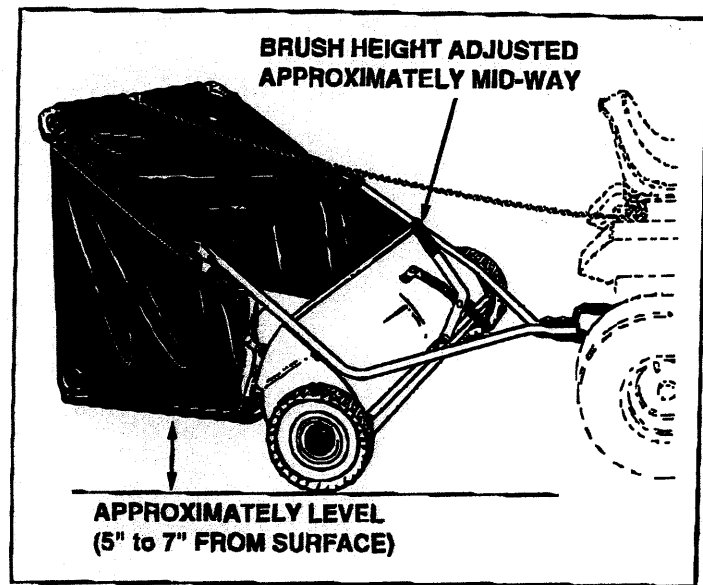
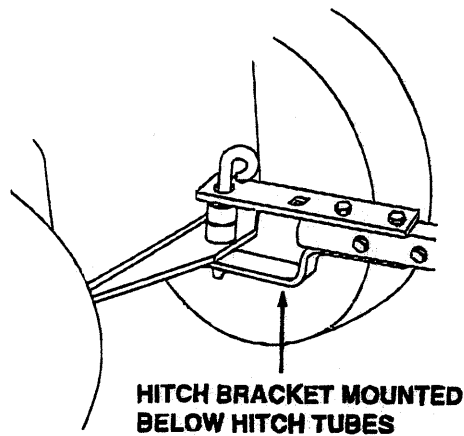
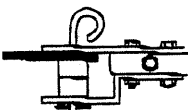
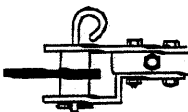
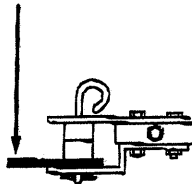


FIGURE 6

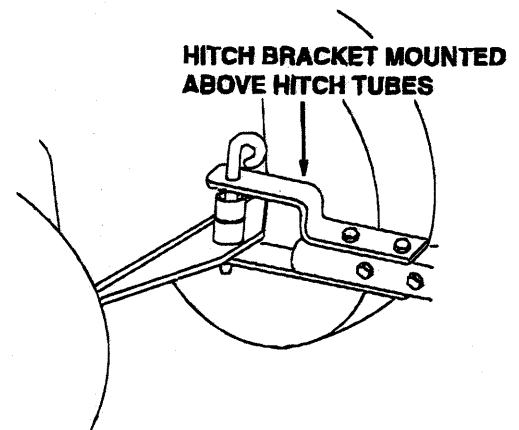
GROUP "A" - For vehicles with hitches having 8" to 10" ground clearance.



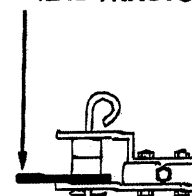
BLACK LINE IS TRACTOR HITCH



GROUP "B" - For vehicles with hitches having 10" to 13" ground clearance.

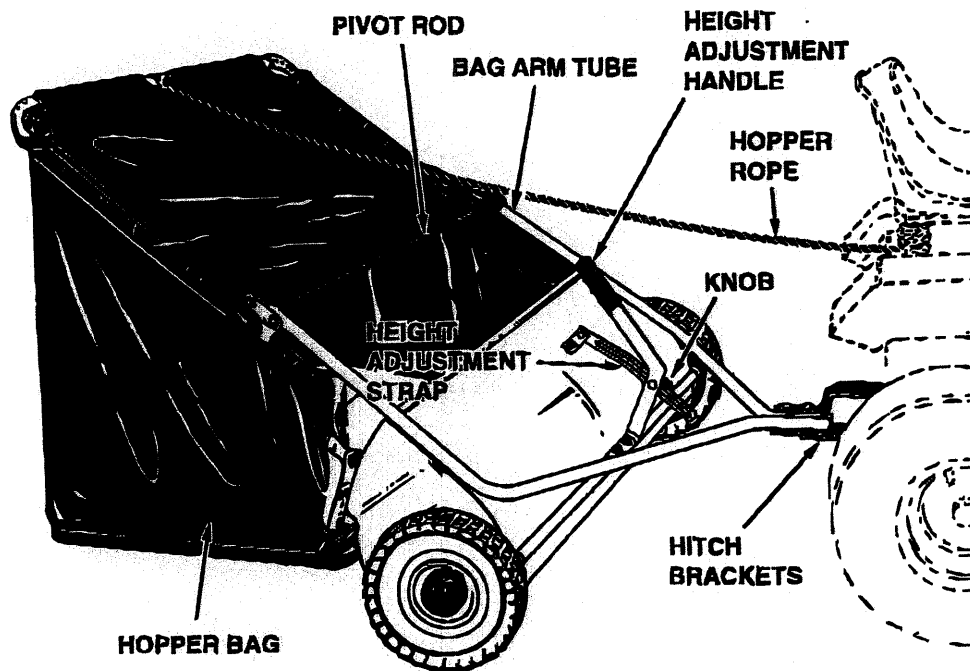


BLACK LINE IS TRACTOR HITCH



OPERATION

KNOW YOUR SWEEPER



Hopper Bag	Collects grass clippings, leaves and debris.
Hopper Rope	Permits dumping of hopper bag from the drivers seat.
Bag Arm Tubes	Connects the hopper bag to the sweeper housing.
Pivot Rod	Allows hopper bag to tilt forward to dump material.
Height Adjustment Handle	Adjusts the operating height of the sweeper.
Height Adjustment Strap	Holds the height adjustment handle in position when locked.
Knob	Locks the height adjustment handle to the height adjustment strap.
Hitch Bracket	Connects the sweeper to the towing vehicle. Adjusts for various height tractor hitches.

HOW TO USE YOUR SWEEPER

BRUSH HEIGHT ADJUSTMENT

To adjust your sweeper brushes to the best operating height, loosen the adjustment knob and push down on the height adjustment lever to raise the brush. See figure 6. Best adjustment is when the brush setting is 1/2" down into the grass. Always mow the grass to an even height before sweeping.

SWEEPING SPEED

Try a starting speed of approximately 3 m.p.h. (third gear on most tractors). Depending on the conditions, it may be necessary to adjust the sweeping speed in order to achieve best results.

DUMPING OF SWEEPER

Your sweeper can be dumped easily without getting off of the rider or tractor. Simply pull the rope forward to dump the hopper. Always empty hopper after each use.



CAUTION: Never attach the hopper rope to any part of your body or clothing! Never hold onto the rope while towing the sweeper! Attach the rope to the towing vehicle to keep it away from wheels and rotating parts.



CAUTION: Keep sweeper away from fire. Excessive heat can damage the brushes and hopper bag and could cause the bag and its contents to burn.

MAINTENANCE

CUSTOMER RESPONSIBILITIES

Read and follow the maintenance schedule and the procedures listed in the maintenance section.

MAINTENANCE SCHEDULE Fill in dates as you complete regular service.	Service Dates					
	Before each use	After each use	Twice a year	Every season	Before storage	Every two years
Check for loose fasteners	X					
Check for worn or damaged parts	X		X			
Lubricate brush shaft bearings		X				
Lubricate wheel bearings			X			
Clean Sweeper		X		X		
Clean/Lubricate gears					X	

SCHEDULED MAINTENANCE

- Clean the sweeper after each use. Inspect for worn or damaged parts, such as brushes and wheels.
- Lubricate the brush shaft bearing twice a year with a few drops of light weight oil. See figure 7.

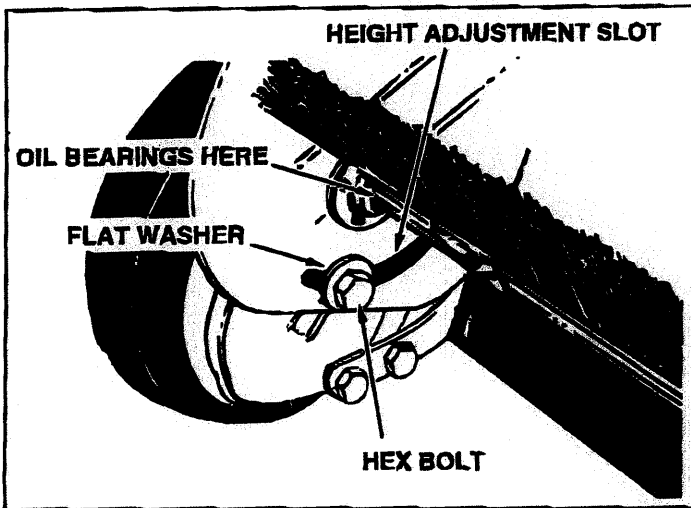


FIGURE 7

- Every two years, remove the wheels and clean the gears found inside the wheel housing. After cleaning, lubricate the gears with an even coat of light grease. To remove the wheel, pop off the hub cap and remove the lock nut and flat washer. See figure 8.

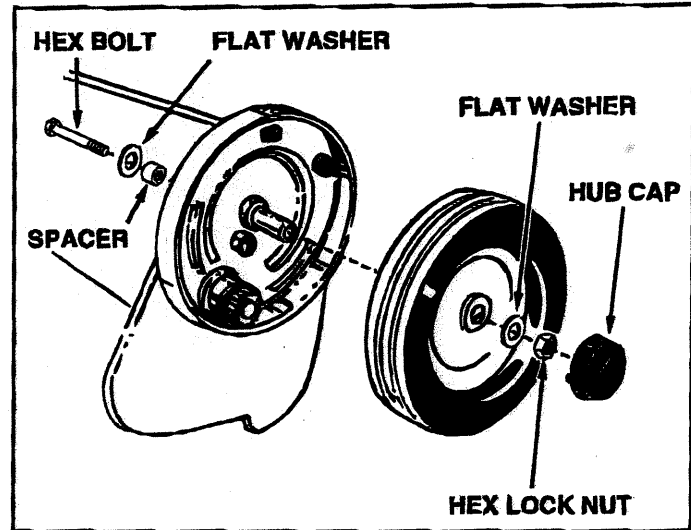


FIGURE 8

CLEANING

- Clean sweeper housing with a soft brush or cloth.
- Clean debris from hopper bag with a brush or broom.
- Remove any material which has wrapped around brushes or ends of brush shaft.

STORAGE



CAUTION: Before storing the sweeper, always empty the hopper bag to avoid spontaneous combustion.

- Clean the sweeper and hopper bag thoroughly to help prevent rust and mildew.
- To collapse the hopper bag for storage, remove the two hopper support rods from the rear of the hopper.
- Store in a dry area.

SERVICE AND ADJUSTMENTS

BRUSH REPLACEMENT

NOTE: Brush replacement should be done one brush at a time.

1. Remove the hopper bag from the sweeper.
2. Loosen the hex bolts and lock nuts on two single brush retainers which clamp one brush to the double brush retainers. **Do Not loosen** or remove the bolts which fasten the double brush retainers to the brush shaft. See figure 9.
3. Slide the brush out of the retainers, noting on which side of the brush the bristles overlap. See figure 9.
4. Install new brush, making sure the bristles overlap on the same side of the brush as before. See figure 9.

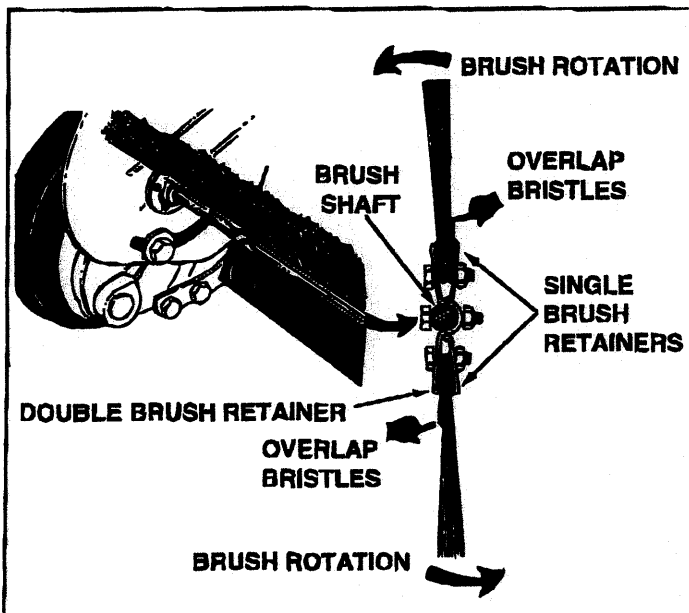


FIGURE 9

WHEEL GEAR AND PAWL SERVICE

IMPORTANT: Do not remove both wheels at the same time to avoid mixing of parts. (The R.H. and L.H. ratchet gears are not interchangeable.) Make notes on the position of washers and snap rings during disassembly.

1. Remove one wheel from the sweeper.
2. Remove the retaining rings and washers which hold the ratchet gear onto the brush shaft.
3. Remove the gear by sliding it off the brush shaft. (Look for the drive pin, which may fall out of the brush shaft when the ratchet gear is removed.) See figure 10.
4. To reassemble, insert the drive pin through the hole near the end of the brush shaft. Make sure the pin slides back and forth easily in the shaft.
5. Lightly grease the shaft and fill the ratchet gear with grease. Assemble the ratchet gear back onto the shaft.
6. Lightly grease the axle and the wheel's gear teeth and then reassemble the wheel. The brushes should rotate **only** during forward rotation of the wheel. If the brushes are driven (rotated) by both forward and reverse rotation of the wheel, the drive pin is jamming in the ratchet gear. Disassemble to clean and lubricate the drive pin and the ratchet gear.

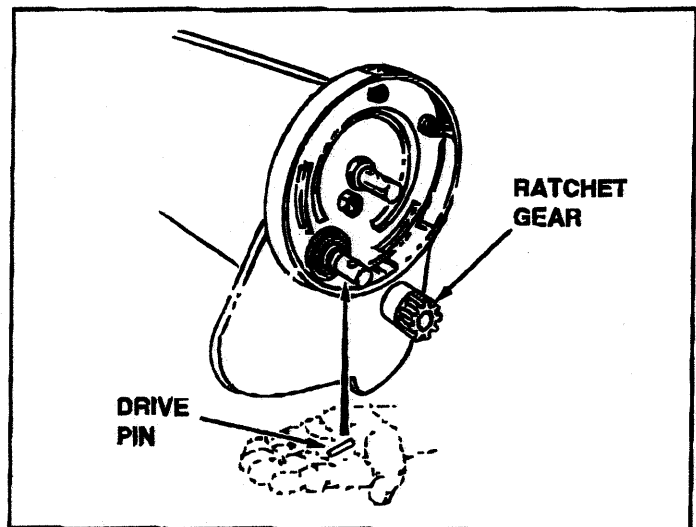


FIGURE 10

TROUBLESHOOTING

Wheels skid when sweeping.

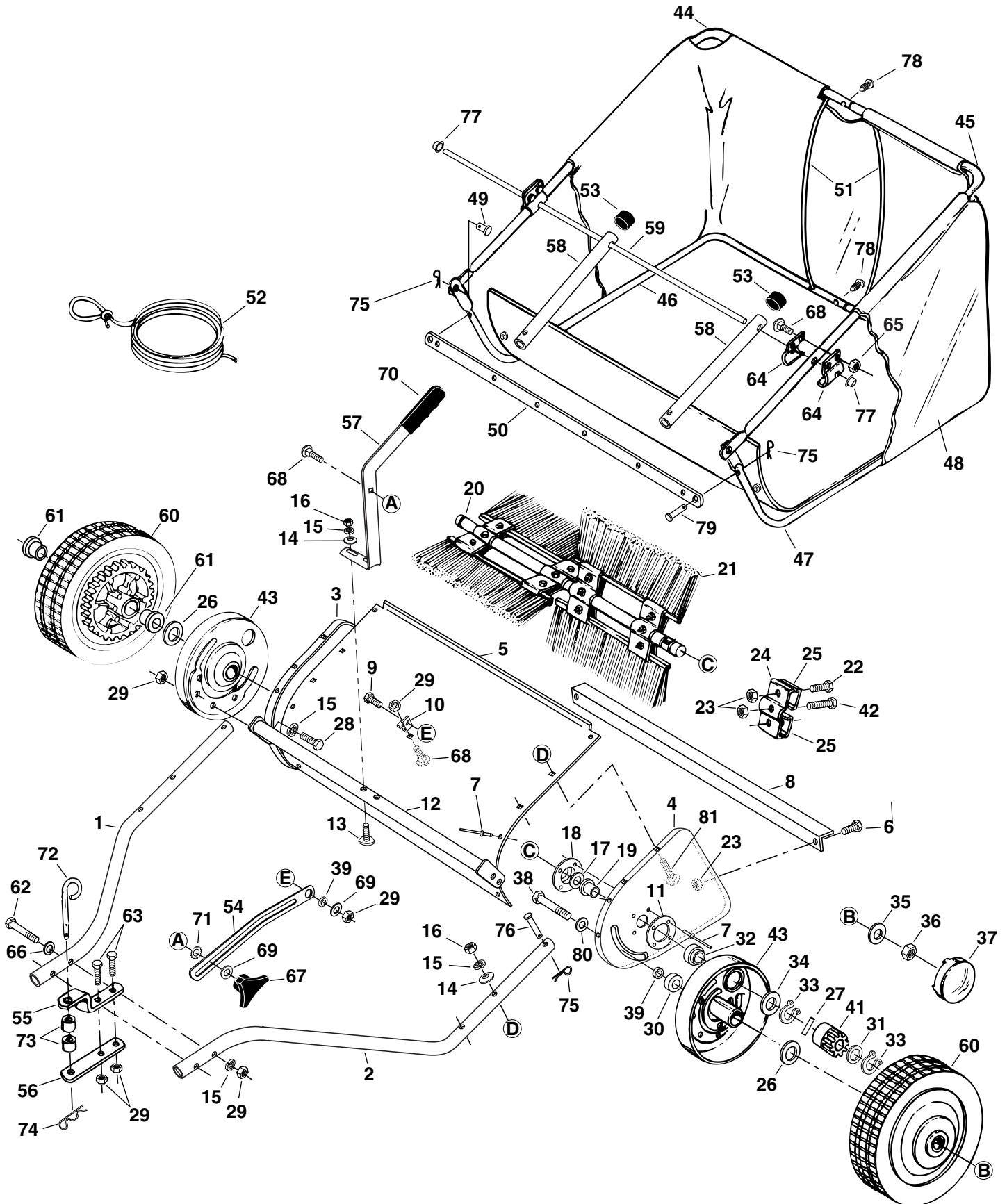
1. Brushes set too low.
2. Brushes are jammed
3. Wheels are jammed.

1. Adjust height till brushes are 1/2" down into grass.
2. Stop sweeper. Remove obstruction.
3. Remove one wheel at a time to check for obstruction or damage. Refer to Service and Adjustments section.

NOTES

PARTS

REPAIR PARTS FOR MODEL 190-459A-100 46" LAWN SWEEPER



REPAIR PARTS FOR MODEL 190-459A-100 46" LAWN SWEEPER

Ref. No.	Part No.	Qty.	Description	Ref. No.	Part No.	Qty.	Description
1	48602	1	Hitch Tube, R.H.	42	43661	4	Bolt, Hex 1/4-20 x 1" Lg.
2	48601	1	Hitch Tube, L.H.	43	64559	2	Ass'y, Dust Cover
3	24950	1	End Plate, R.H.	44	46734	1	Tube, Upper Hopper Frame R.H.
4	24951	1	End Plate, L.H.	45	46735	1	Tube, Upper Hopper Frame L.H.
5	24953	1	Wrapper	46	46732	1	Tube, Lower Hopper Frame R.H.
6	43175	2	Bolt, Hex 1/4-20 x 1/2" Lg.	47	46733	1	Tube, Lower Hopper Frame L.H.
7	C-9M5732	16	Rivet, Pop	48	48547	1	Hopper Bag
8	24871	1	Brace, Rear Support	49	48366	2	Clevis Pin, 3/8" x 1/2"
9	43182	1	Bolt, Hex 5/16-18 x 3/4"	50	24189	1	Strap, Bag Frame
10	23826	1	Bracket, Angle	51	43938	2	Rod, Hopper Support
11	23336	2	Washer, Special	52	43737	1	Hopper Rope
12	64521	1	Height Adjustment Tube Ass'y.	53	44481	2	Cap, Vinyl
13	44947	2	Bolt, Cvd. Hd. 5/16-18 x 1-5/8" Lg.	54	24979	1	Strap, Height Adjustment
14	44695	6	Washer, Bowed 1" x .32" x .06"	55	23687	1	Bracket, Hitch
15	43086	10	Lock Washer, 5/16"	56	24192	1	Bracket, Hitch (Straight)
16	43083	6	Nut, Hex 5/16-18 Thread	57	24981	1	Handle, Height Adjustment
17	R19212113	2	Washer, 5/8" SAE	58	46781	2	Tube, Bag Arm
18	1629-56	2	Retainer, Dust Cover	59	46823	1	Rod, Hopper Bag Pivot
19	44910	2	Bushing, Brush Shaft	60	44985	2	Wheel & Tire Ass'y. (with bearings)
20	24929	1	Brush Shaft	61	45088	4	Wheel Bearing
21	48600	4	Brush, 46"	62	46782	2	Bolt, Hex 5/16-18 x 3" Lg.
22	43012	8	Bolt, Hex 1/4-20 x 3/4" Lg.	63	43224	2	Bolt, Hex 5/16-18 x 2-1/4" Lg.
23	43013	14	Nut, Hex Lock 1/4-20 Thread	64	23331	4	Clamp, Hopper Mount
24	23580	4	Retainer, Brush (Double)	65	46980	4	Nut, Hex 5/16-18 (SEMS)
25	23581	8	Retainer, Brush (Single)	66	R19111116	2	Washer, Flat (5/16) 11/32" x 11/16"
26	44008	2	Washer, Flat 1-1/8" x .78" x .025"	67	43720	1	Knob, Wing 5/16-18 Thread
27	47046	2	Dowel Pin (Drive)	68	43080	6	Bolt, Carriage 5/16-18 x 3/4" Lg.
28	44692	4	Bolt, Hex 5/16-18 x 1/2" Lg.	69	43081	2	Washer, Flat 5/16" Std. Wrt.
29	43064	10	Nut, Hex Lock 5/16-18 Thread	70	43943	1	Grip, Height Adjust
30	44911	2	Spacer, .39 I.D." x 1-1/4" O.D. x .5"	71	44732	1	Washer, Tooth Lock 5/16"
31	44006	2	Washer, Flat .849" x .598" x .025"	72	23353	1	Pin, Hitch
32	46219	2	Spacer, .78 I.D." x 1-1/4" O.D. x .5"	73	23368	2	Tube, Hitch Spacer
33	1650-21	4	Ring, Retaining .594"	74	43343	1	Hairpin Cotter, 1/8" #4
34	44007	2	Washer, Shim 1-1/8" x .594" x .025"	75	43055	6	Hairpin Cotter, 3/32" #3
35	141	2	Washer, Flat 1-1/2" x .375" x .062"	76	46867	2	Pin, Clevis 1/4" x 1-3/4" Lg.
36	1038	2	Nut, Nylock 3/8-24 Thread	77	44917	2	Palnut, 3/8"
37	2674-32	2	Hub Cap	78	48402	2	Plastic Plug
38	44961	2	Bolt, Hex 3/8-24 x 3-1/4" Lg.	79	48365	2	Clevis Pin, 1/4" x 1-1/8"
39	23400	3	Bushing, Spacer	80	43070	2	Washer, 3/8" Std. Wrt.
40	48652	1	Gear, Pinion R.H. (not shown)	81	44977	4	Bolt, Carriage 5/16-18 x 2"
41	48651	1	Gear, Pinion L.H.		48901	1	Owners Manual